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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,081	06/15/2006	Tadashi Ino	Q95054	9129
23373	7590	04/19/2010	EXAMINER	
SUGHRUE MION, PLLC			BOYLE, ROBERT C	
2100 PENNSYLVANIA AVENUE, N.W.				
SUITE 800			ART UNIT	PAPER NUMBER
WASHINGTON, DC 20037			1796	
			NOTIFICATION DATE	DELIVERY MODE
			04/19/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/583,081	INO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	ROBERT C. BOYLE	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 02 March 2010.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-8 and 17-24 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-8, 17-24 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>2/3/2010</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

## **DETAILED ACTION**

### ***Response to Amendment***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. The new grounds of rejection set forth below are necessitated by applicant's amendment filed on 3/2/2010. In particular, claims 1 and 18 have been amended to recite the fluoride ion concentration of not higher than 12 ppm during a Fenton's reagent based stability test. This presents the claims in a manner with a scope not previously examined. Thus, the following action is properly made FINAL.

### ***Claim Objections***

3. The objection presented in the previous Office Action is withdrawn in view of the amendment made to claim 20.

### ***Claim Rejections - 35 USC § 103***

4. Claims 1-5, 7-8, 17-21, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Curtin** (US 6,150,426) in view of **Schreyer** (US 3,085,083) as evidenced by the definition of "electrolyte", Hawley's Condensed Chemical Dictionary, 14<sup>th</sup> Edition, 2002.
5. As to claim 1, Curtin teaches a sulfonated fluoropolymer, that are used in membranes, with a SO<sub>3</sub>M group where M can be Na (col. 1, ln. 15-22; col. 3, ln. 57-col. 4, ln. 43; col. 9, ln. 65-col. 10, ln. 5). A membrane of a sulfonated fluoropolymer is an electrolyte membrane because polymers of perfluorinated sulfonic acid are electrolytes as evidenced by the definition of 'electrolyte' provided by Hawley's Condensed Chemical Dictionary.
6. Curtin does not teach -CF<sub>2</sub>H endgroups.

7. Schreyer teaches the formation of fluoropolymers with  $-\text{CF}_2\text{H}$  endgroups (col. 2, ln. 60-67). One of ordinary skill in the art at the time the invention was made would have been motivated to modify the fluoropolymer in Curtin with the endgroups taught in Schreyer because terminating the polymer in a  $-\text{CF}_2\text{H}$  endgroup adds to the thermal stability and corrosion resistance of the polymer (Schreyer: col. 1-2, ln. 69-24).

8. Curtin and Schreyer to not teach the fluoride ion concentration after the stability test.

9. However, Curtin and Schreyer teach essentially the same composition and process as that of the claimed, and one of ordinary skill in the art would have a reasonable basis to believe the composition of Curtin and Schreyer or Tatemoto and Schreyer exhibits essentially the same properties. Since the PTO cannot conduct experiments, the burden of proof is shifted to the applicants to establish an unobvious difference. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

10. Furthermore, it is the examiner's position that the fluoride ion concentration after a stability test is dependent on the end group of the polymer chain (see instant specification, pg. 4, ln. 15-19). As the prior art teaches polymers with the same end-groups as claimed, the prior art must have the same fluoride ion concentration after a stability test.

11. Furthermore, the claimed range of "not higher than 12 ppm" includes zero. As the prior art does not recite a fluoride ion concentration, it is the examiner's position that the prior art contains no fluoride ion concentration. The concentration of no fluoride ions falls within the claimed range.

12. The rejection of claims 1-5, 7-8, 17-21, 23-24 is adequately set forth in paragraphs 5-21 in the office action mailed on 12/2/2009 and is incorporated here by reference.

13. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Curtin** (US 6,150,426) in view of **Schreyer** (US 3,085,083) and **Terazo** (US 2002/0009626) as evidenced by the definition of "electrolyte", Hawley's Condensed Chemical Dictionary, 14<sup>th</sup> Edition, 2002. The discussion with respect to Curtin and Schreyer as set forth in paragraphs 5-21 above is incorporated here by reference.

14. The rejection of claim 22 is adequately set forth in paragraphs 22-24 in the office action mailed on 12/2/2009 and is incorporated here by reference.

15. Claims 1-8, 17-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Tatemoto** (WO 2004/018527) in view of **Schreyer** (US 3,085,083). As the cited WO publication is in a non-English language, the English equivalent, US 2005/0228127 ("Tatemoto"), has been utilized in place of WO '527. All column and line number citations are made with respect to the above mentioned U.S. document.

16. As to claim 1, Tatemoto teaches a electrolyte membrane of a fluoropolymer with a  $\text{SO}_3\text{M}$  group where M can be a group 1 metal (abstract; ¶ 4, 15-24, 34, 200-202). Tatemoto does not teach  $-\text{CF}_2\text{H}$  endgroups.

17. Schreyer teaches the formation of fluoropolymers with  $-\text{CF}_2\text{H}$  endgroups (col. 2, ln. 60-67). One of ordinary skill in the art at the time the invention was made would have been motivated to modify the fluoropolymer in Tatemoto with the endgroups taught in Schreyer because terminating the polymer in a  $-\text{CF}_2\text{H}$  endgroup adds to the thermal stability and corrosion resistance of the polymer, see Schreyer, columns 1-2, lines 69-24. Therefore, the invention as a

whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

18. Tatemoto and Schreyer do not teach the fluoride ion concentration after the stability test.

19. However, Tatemoto and Schreyer teach essentially the same composition and process as that of the claimed, and one of ordinary skill in the art would have a reasonable basis to believe the composition of Curtin and Schreyer or Tatemoto and Schreyer exhibits essentially the same properties. Since the PTO cannot conduct experiments, the burden of proof is shifted to the applicants to establish an unobvious difference. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

20. Furthermore, it is the examiner's position that the fluoride ion concentration after a stability test is dependent on the end group of the polymer chain (see instant specification, pg. 4, ln. 15-19). As the prior art teaches polymers with the same end-groups as claimed, the prior art must have the same fluoride ion concentration after a stability test.

21. Furthermore, the claimed range of "not higher than 12 ppm" includes zero. As the prior art does not recite a fluoride ion concentration, it is the examiner's position that the prior art contains no fluoride ion concentration. The concentration of no fluoride ions falls within the claimed range.

22. The rejection of claims 1-8, 17-24 is adequately set forth in paragraphs 25-40 in the office action mailed on 12/2/2009 and is incorporated here by reference.

***Response to Arguments***

23. Applicant's arguments filed 3/2/2010 have been fully considered but they are not persuasive.

24. Applicant argues that the prior art does not disclose an electrolyte membrane or immobilized active substance material that has an eluted fluoride ion concentration of not higher than 12 ppm in a Fenton's reagent-based stability test.

25. However, (a) Curtin and Schreyer and/or (b) Tatemoto and Schreyer teach essentially the same composition and process as that of the claimed, and one of ordinary skill in the art would have a reasonable basis to believe the composition of Curtin and Schreyer and/or Tatemoto and Schreyer exhibits essentially the same properties. Since the PTO cannot conduct experiments, the burden of proof is shifted to the applicants to establish an unobvious difference. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

26. Furthermore, it is the examiner's position that the fluoride ion concentration after a stability test is dependent on the end group of the polymer chain (see instant specification, pg. 4, ln. 15-19). As the prior art teaches polymers with the same end-groups as claimed, the prior art must have the same fluoride ion concentration after a stability test.

27. Furthermore, the claimed range of "not higher than 12 ppm" includes zero. As the prior art does not recite a fluoride ion concentration, it is the examiner's position that the prior art contains no fluoride ion concentration. The concentration of no fluoride ions falls within the claimed range.

28. Applicant reiterates the argument that investigators in the field of polymers containing acid/acid groups believe that  $-CF_2H$  group is an unstable functional group resulting in gradual polymer decomposition.

29. Schreyer teaches the –CF<sub>2</sub>H group is a stable group that avoids degradation resulting from the formation of carboxylate groups (col. 2, ln. 60-70). As the prior art teaches the –CF<sub>2</sub>H group is stable, Applicant's argument is not persuasive.

***Conclusion***

30. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT C. BOYLE whose telephone number is (571)270-7347. The examiner can normally be reached on Monday-Thursday, 9:00AM-5:00PM Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert C. Boyle/  
Examiner, Art Unit 1796

/Vasu Jagannathan/  
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